CATS NEWSLETTER

The Official Journal of the Capital Area Timex/Sinclair Users Group

Presidential Ramblings

WOW, I can't begin to detail all of the information I culled from our other T/SUG Newsletters! CATS is lucky to have so many Sinclair gurus in our ranks, but we definitely do not have the only ones willing to share their Know How with the rest of us. I urge you to come early and really read the many NLs we've accumulated for your use. But, plese IMMEDIATELY REPLACE ANY PAGES YOU BORROW FOR COPYING. Just don't help yourself permanently to articles that attract you. Those who have done so in the past have lessened opportunities for others.

I copied Goodies from SMUG Bytes, including Bill Heberlein's old articles on MSCRIPT and his newer ones on Quill Print Driver, to name but a few. And, I discovered the value of his routine of not only numbering each page but also adding NL name and issue date. Since I had copied some 20 pages, refiling was simplified. Also, NL EDITORS TAKE NOTE, I can now give appropriate credits should I pass along the article. How many times have you noted that a reprint does not include credits because the Editor states the source is lost?

For those of you who never see our collection I suggest that you write and let us know the type of info that interests you, including what machine you use, and Tim will include a reprint or two in each of our issues. [I guess I can throw in one or two per issue, Ruth - ED] After all, sharing is what SUGs are all about. When SNUG gets its comprehinsive NL orgainized there

will be no need for reprints, but until then we'll try to keep you better informed about ALL of Sinclair land. It's YOUR NL, so let Tim know what you want to see in it and WRITE, WRITE, WRITE the stuff he can print! [Hear, Hear - ED]

Sample tidbit gleaned from a Canadian NL.: When ordering anything from Canada send a Postal Money order, not a personal check unless it is made payable in Canadian funds. Bank charges eat up the total of our checks. What tidbit can YOU share? All are news to someone!

Jack Dohany's catalog is proof of his unfailing support of us 2068/Spectrum users. Where else can you get programs customized to your systems for only token cost and Pay As You Go opportunity? (He TRUSTS us to pay when we can and only if we like his product!) Send $1 and a large SASE for his 10 page catalog. He's one of the few carrying AERCO and Zebra systems software and has hardware for the latter. (NOTE: we'll soon publish names of ALL current Sinclair vendors, so others will get a free "plug".)

Speaking of free publicity, CATS owes votes of thanks to Bill Jones who gave us lots of it during his reign with UPDATE. And since UPDATE is now the only U.S. magazine devoted to Sinclair machines, I trust you'll support its new publishers, Carol & Frank Davis, by sending $18 to P.O. Box 1095, Peru, IN 46970.

Attendance records of the previous picnics were broken at the

Contents

Key Dates

13 October: CATS Meeting
        11:00 Workshop
        1:00 Executive Board Meeting
        2:00 General Meeting

22 October: Newsletter Deadline
                For the Next Issue

From The Editor:

The biggest change in this issue of the newsletter is the inclusion of T/S 1000 and 2068 articles. At the last meeting it was expressed to me that people wanted more 1000 and 2068 articles, even if they are taken from other Newletters.

The 2068 article taken from the most recent issue of Sinc-Link is pertainate to this group. CATS Member Bob Warner has converted my "Game of Chaos" program to the 2068. It's a nice follow up to my previous article. As much as Bob may say that the 2068 program is by myself, it's not. When coverting a program to another computer or language, you credit the original author, but mention that the current version is by yourself. Thanks Bob for the thought.

Ruth does not do justice to the picnic in her column. To those that attended, they know it was the best picnic so far. The weather was mild, if not a little too windy. The setting was great, nice cozy cottage on the river front. The hosts, with their warm-heartedness and humor, made us all feel welcome. There were even two brave souls that took the Diggs' small sailboat for a test drive. When Mark Fisher told me I would get wet, I had not idea that he meant I'd get drenched. For those that came late and wondered why I was shirtless, my shirt was in the dryer (Thanks Mrs. Diggs). All in all, my wife and I had a great time. Well worth the nearly 2 hour drive.

For some reason I seem to be running out of things to say, so I'll end here.

Happy Hacking,

Tim

2068 Report
By Joe Miller

2068 Disk Library

CATS [read that as Joe - ED] has converted the tape library to disk. Now larken disk owners can have the library on eleven, single side, 40 track disks. The cost per disk will be $2.25, plus postage. The disk library will contain the same programs that are available on tape. The disks will autoload and the user will be presented with a menu of programs to choose.

Our thanks goes to John Riley, our former librarian, for all the work done. Without John, the disk library would still be in the making. One need only see one of this screen presentions to appreciate the work he put into making this the BEST, or one of the best, disk libraries in Sinclairland. Again, thank you John for the fine job.

Other 2068 Items

The July-Aug issue of Sinc-Link has a review of Word-Master for the 2068. Word-Master has features that are not available in other word processors, such as TASWORD and MSCRIPT. In the same issue, is an article on programmable function keys by Micharl Di Rienzo.

If your computer and/or peripheral is sick and in need of a helping hand, check out Dan Elliott's new repair list in the Vista Newsletter Vol. 3 no. 6.

The 2068 is not a dead computer. It's futire is as bright as ever. New programs are being written to extend it's life. Once such program is being fine-tuned by George Chanmbers which will allow larken owners to read MS-DOS disks and store the data in MSCRIPT files. Larry Kenny is working on a DTP program for the 2068 and is said to be close to releasing it.

Also, the Commodore 1351 mouse will work on the Larken disk interface. On power up, press the right hand button and presto!

New Use For An Old Silicon Friend
By Chuck Spann

A human (as opposed to silicon) friend with a photo lab asked my assistance in solving a problem. The photo printer (original cost in the multi-$10K range), which is computer controlled, was on the blink due to a dead display - a single line flourescent dot-matrix readout. It was analogous to trying to use your computer with the monitor off.

Since several chips used in the display are "custom" and therefore not availble through "normal" sources, the possibilities included factory repair/replacement (in the $1000 range) or an alternative display.

While experimenting with the SER2 port on my QL, I found I could display something - but it was not readable. Since my friend told me what I should be seeing, I was eventually able to "break the code".

The photo computer does NOT use ASCII! The letters and numbers were block shifted in several groups. I wrote a simple looping program to INPUT character CODEs, shift them by the necessary values and display the decoded CHR$ message on the screen (a mini TV).

Saving this program as a BOOT program meant that my friend didn't even need to learn how to operate the QL other than pushing F2. The cost was about $100 for a QL (he already had a small TV set). Using a QL made this "fix" rather easy since it has the SERial ports, boots up from microcartridge easily, displays to a TV, has modest cost and, for me, programs in a BASIC.

Orbit Simulator

By Tim Swenson

Some years ago a friend showed me a program that he had written on his C-128. It showed a planet with an orbiting object. As the object orbited the planet, it left a trail of dots so one could see the orbit shape.

I found it an interesting program and converted it to the QL. Some time later I wrote a short version for the T/S 2068. Just the other day I finally wrote a version for the T/S 1000 (after blowing the dust off my T/S 1000). The QL and the T/S 1000 versions are functionally the same. The T/S 1000 version was taken directly from the QL version. I would have changed the T/S 2068 version to be equal to the other two, but my 2068 is on the fritz and I am lucky to just get it to load and print out. I am sure that 2068ers out there can read the other two versions and modify the 2068 version to match (Do I see a future article?).

Here is how the program works. It starts off by drawing a circle to represent the planet (a dot for the 1000). Then the orbiter appears. In time you will see the orbiter move around the planet, leaving a trail of dots. Eventually the dots will disappear, and the trail is kept the same length.

This program would be boring if you could not alter the orbiter. You can do this. Using the arrow keys (and the joystick on the QL) you can fire a directional rocket on the orbiter, altering its trajectory. If you press the up arrow key, you will add thrust in that direction, and so on with the other keys.

What this means is that you can change the shape of the orbit. Add a thrust in the opposite direction that the orbiter is traveling and you will slow it down, thereby giving it a more eliptical orbit. Doing this again at the right point and you can give it a tighter circular orbit.

You can add lots of thrust on the QL version with not too many problems. The 1000 version is a bit more sensitive. When an orbiter goes off the screen on the QL, the QL ignores any points off the screen. Eventually, the orbiter will come back. Not so on the 1000 version. If the orbiter goes off the screen, you will get an error. I'll leave it up to you if you want to change it.

With this program it's easy to demonstrate Kepler's Second Law dealing with orbital paths, stating that a orbital object sweeps out equal area in equal time. In other words, the closer to the planet, the tighter the orbit, and the faster it travels. For a detailed description, watch reruns of COSMOS.

QL version

```
100 WINDOW #1,512,256,0,0 : PAPER 0
110 DIM trail(50,2)
120 CLS
130 SCALE 1000,0,0
140 INK 4 : FILL 1 : CIRCLE 500,
    500,30
150 FILL 0 : INK 7
160 LET xpos=500 : LET ypos=750
170 LET xmov=9 : LET ymov=0
180 LET top=0 : LET last=1
190 REPeat loop
200    LET top=top+1
210    IF top>50 THEN LET top=1
220    POINT xpos,ypos
230    LET trail(top,1)=xpos : LET
    trail(top,2)=ypos
240    LET dxpos=xpos-500
250    LET dypos=ypos-500
260    LET distance=(dxpos^2+dypos
    ^2)^.5
270    LET gravity=20000/distance^2
280    LET xmov=xmov-gravity*dxpos
    /distance
290    LET ymov=ymov-gravity*dypos
    /distance
300    LET key = KEYROW(1)
310    IF key<>0 THEN joystick
320    LET xpos=xpos+xmov
330    LET ypos=ypos+ymov
340    IF top+1=last OR top-49=last
```

```
       THEN
350      INK 0 : POINT trail(last,1)
     ,trail(last,2) : INK 7
360      LET last=last+1
370      IF last>50 THEN LET last=1
380    END IF
390 END REPeat loop
400 DEFine PROCedure joystick
410 BEEP 100,1
420    IF key=4 OR key=6 OR key=20
     THEN LET ymov=ymov+1
430    IF key=128 OR key=144 OR
     key=130 THEN LET ymov=ymov-1
440    IF key=2 OR key=6 OR key=130
     THEN LET xmov=xmov-1
450    IF key=16 OR key=144 OR
     key=20 THEN LET xmov=xmov+1
460 END DEFine joystick
```

T/S 2068 Version

```
 10 BRIGHT 1 : PAPER 0: BORDER
0: CLS
 20 INK 4: CIRCLE 128,96,7
 30 INK 7
 40 LET xpos=128: LET ypos=140
 50 LET xmov=4: LET ymov=0
 60 PLOT xpos,ypos
 70 LET dxpos=xpos-128
 80 LET dypos=ypos-96
 85 LET zz=(ABS (dxpos)↑2+ABS (
dypos)↑2)
 90 LET dist=SQR zz
100 LET grav=600/dist↑2
110 LET xmov=xmov-grav*dxpos/di
st
120 LET ymov=ymov-grav*dypos/di
st
130 LET xpos=xpos+xmov
140 LET ypos=ypos+ymov
200 GO TO 60
```

T/S 1000 Version

```
 10 CLS
 20 DIM T(10,2)
 30 LET PX=32
 40 LET PY=21
 50 PLOT PX,PY
100 LET XPOS=32
110 LET YPOS=4
130 LET XMOV=4
140 LET YMOV=0
150 LET TOP=0
160 LET LAST=1
200 REM LOOP
210 LET TOP=TOP+1
220 IF TOP>50 THEN LET TOP=1
230 PLOT XPOS,YPOS
240 LET T(TOP,1)=XPOS
250 LET T(TOP,2)=YPOS
260 LET DXPOS=XPOS-PX
270 LET DYPOS=YPOS-PY
273 LET A=ABS (DXPOS)**2
275 LET B=ABS (DYPOS)**2
280 LET TEMP=ABS (A+B)
285 LET DIST=SQR TEMP
290 LET GRAV=6/SQR (DIST)
300 LET XMOV=XMOV-GRAV*DXPOS/DI
ST
310 LET YMOV=YMOV-GRAV*DYPOS/DI
ST
320 LET XMOV=XMOV-(INKEY$="5")+
(INKEY$="8")
330 LET YMOV=YMOV+(INKEY$="7")-
(INKEY$="6")
340 LET XPOS=XPOS+XMOV
350 LET YPOS=YPOS+YMOV
360 IF (TOP+1=LAST) OR (TOP-9=L
AST) THEN GOSUB 1000
370 GOTO 200
1000 REM REMOVE TRAIL
1010 UNPLOT T(LAST,1),T(LAST,2)
1020 LET LAST=LAST+1
1030 IF LAST>10 THEN LET LAST=1
1040 RETURN
```

Cocoo Two: The Other Shoe Drops

By Mark Fisher

A review of "Crime and Puzzlement"
John Perry Barlow
Whole Earth Review
Fall 1990

Last month, I reviewed "Cocoo's Nest", by Clifford Stoll. This told the story of Stoll's year long search for the hacker that had broken into his system - a search that was unsupported by the various agencies theoretically responsible for national security. My feeling was that is had been like trying to push an elephant. Well, the elephant is moving now!

The Scene opens: the peacable jungle

The scene opens in an electronic landscape - a nationwide private teleconference on computer security held on the WELL. WELL is a BBS that occupies a complex of one minicomputer linked to 64 micros. Harpers Magazine had sponsored the conference to tap current views on the underside of modern computing. In addition to the 40 invited guests (such as John (Cap'n Crunch) Draper, Clifford Stoll, Lee Felsenstein and others), an odd

couple of visitors appeared, with "handles" of acid and optik. A check of the address files gave their real names as Acid Phreak and Phiber Optik. It looked like the private conference had picked up a couple of real crackers.

As they joined the discussion, it became clear that these were NOT reformed citizens. In the electronic world they occupied, they were fractious, vulgar, amoral, insulting, and too damned good at their chosen work. Barlow's interaction with them escalated 'till they produced a copy of Barlow's credit history, dredged up from the innards of TRW.

It was time for a shift of scene. Barlow left a message for Phiber Optik to please contact him by phone. He wouldn't insult his skills by giving him his number. The call came soon. In the course of succeeding voice conversations, Phiber turned out to be an intelligent, civilized, and surprisingly principled kid of 18 who sounded (and still sounds) like he would never harm man or data. The extreme image he and his friends presented on the BBS had been an example of someone trying to live up to what they wanted. Over the next few months, Barlow (who lives in Wyoming) "became less their adversary and more their scoutmaster" - recieving "conference calls" from six or eight pay phones around New York. There were no sounds of quarters dropping into slots.

The Elephant begins to move...

It began to look like they were indulging in the favorite adolecent pastime of trespassing. While Barlow had physically broken into NORAD when he was 17, this group were doing the same thing electronically. Barlow had been caught and held for two hours before the MP's let him go - they could see that he wasn't a commie spy. Acid was caught too.

"On January 24, 1990, a platoon of Secret Service agents entered the apartment which Acid Phreak shares with his mother and 12 year old sister. The latter was the only person home when they burst through the door with guns drawn. They managed to hold her at bay for about half an hour untill their quarry happened home." While waiting, the agents had packed up every device in the apartment that contained electronics - computers, phones, a ghetto blaster, audio tapes, and disks. When his mother asked why her son was being arrested, she was told he had been responsible for the ATT system crash several days earlier. No charges of any sort were filed though - even four months later. All his hardware, software, and data are still in custody.

They're beginning to run...

This isn't an isolated case of a "loose cannon" of an agent going beyond authority. Across the country this spring, there have been a series of armed break in's, coupled with total confiscations of hardware and software.

There exists, in the depths of a Southwest Bell computer, an INCREDIBLY turgid document of around 3K, relating to their handling of billing for the 911 phone system. There are no access codes, passwords, or trade secrets involved.

It was retrieved as a trophy by a cracker named The Prohpet, and posted in various BBS's. Knight Lightning is a publisher of an entirely electronic hacker's magazine, "Phrack". He was amused by the document, and included it in his publication. Rich Andrews is a SYSOP of a BBS named Jolnet. The 911 document appeared as a file there. To be on the safe side, Rich forwarded a copy to AT&T officials.

The response was somewhat more than he expected. The Secret Service persuaded a Lockport grand jury that the document was worth $79,499, and that indightments should be filed against The Prohpet and two of his friends. They face $2 million in fines and 40 years in

prison. Knight Lightning faces 30 years in prison and $122,000 in fines. In addition to these charges, the Secret Service has siezed his publication, along with all related hardware, software, and data.

Leonard Rose, a UNIX programmer that had made the mistake of contacting Knight Lightning in the last several years, was the host of a six hour interrogation by the FBI.

Finally, the Secret Service rewarded Rich Andrews by confiscating the Jolnet BBS computer, along with all the e-mail, read and unread that had been left there. Like many others whose equipment was siezed, he hasn't been charged with anything.

They're running this way!...

Steve Jackson Games publishes role-playing games. As a byproduct, Steve Jackson runs a BBS to keep in touch with his customers. On March 1, 1990, agents of the Secret Service visited their offices, forcibly opened filing cabinets, and eventually left, carrying three computers, two laser printers, several hard disks, and many boxes of floppies. In three months, no charges have been filed, the material remains in the custody of the Secret Service, and they have stopped taking calls from Steve Jackson.

It seems that Steve had touched a nerve with his choice of game subjects. For the last year, the staff had been working on "GURPS Cyberpunk." At the time of the SS raid, it existed entirely on hard disk. The SS said at the time, based on the author's background that it was a "handbook on computer crime." As you might expect, the real thing is 120 pages of small print and involved descriptions. There might be criminal information in there, but it's hard to see where.

After negotiations, the SS allowed Steve Jackson access to his data. However, his access was limited - to one computer, operated by a SS agent who was a two finger typist. They have reconstructed the game, based largely on notes and fragments that had been in the hands of scattered testers. It may not be in time, however - half of the staff has been laid off.

On May 8, 1990 Operation Sun Devil took off. Armed with shotguns, sledgehammers, and 27 search warrants, the SS confiscated 40 computers and 23,000 disks. The crime commited by these people was membership in a hacker's User's Group bearing the adolecent name, The Legion of Doom. Many of these computers were used by, and owned by, others in the affected families.

Where does an Elephant sleep?

The problem is that the SS doesn't know what they are investigating. The average SS agent knows drugs and Guns. Modems and bytes are just not within their thought. They reflect a common fear of the unknown - a fear which has previously been focused on Commies, or Aids, or Drugs. Cyberpunks, unlike those other three, can strike ANYwhere! They might do ANYthing! And the Fourth Amendment, which applies to speech or paper printing, has not been judged to apply to electronic media. Imagine what would have happened in the Pentagon Papers case if this course could have been followed. Papers, notes, printing presses - these are immune from confiscation. Computers and hard disks, as of now, are fair game, open to armed confiscation on suspicion, to be held without charges indefinitely.

[In a recent issue of UNIX TODAY!, there was a article on the case against Craig Neidorf, aka Knight Lightning. The Government was forced to drop it's case when the defence revealed that the so-called secret 911 document was available from Bellsouth in a public catalog. The whole case was based on the word of two Bellsouth employees that the 911 document was

secret. It was obvious that the U.S. Attorney's Office did not investigate the case very well. - ED]

Swap Shop Addendum
By Dave Bennett

The Swap Shop was held at the picnic on September 15th. The items were set out on tables. Vernon donated a lot of items to CATS. Thanks Vernon. CATS made some money on these items.

At 3 PM the auction was held. Most of the items were sold there. I was the auctioneer.

CATS made a total of $47.45 from all the sales. A few people sold items between themselves. There are still a few items left over. I will bring these to the meeting to be sold. Please contact me if you are interested in these items.

Here is a list of the remaining items:

1. Tandy DCM-3 Modem. 300 baud. Not Hayes compatible. Requires AC adapter with output of 15 VAC at 300 ma (not included).

2. The Secret Guide To Computers Volumes 1 and 2. A couple real interesting books with computer history, programming tips and other great stuff. These books are real sleepers that were somehow missed at the auction.

3. Astro Blaster Arcade game for the Spectrum. Note this game also works on the 2068. (cassette)

4. Home Improvement Planner for the 2068. (cassette)

5. Omnicalc 2 for the Spectrum. (cassette)

6. The IRA Planner for the 1000.

7. VU-Calc for the 1000.

8. The Timex Personal Computer Made Simple. Book for the 1000.

9. BASIC FUN. General computer book of BASIC games, puzzles and problems children can write.

10. Munchers The Ultimate TIMEX/SINCLAIR Games Book. For 1000, 1500 and 2068.

11. CRUNCHERS 21 Simple Games for the TIMEX/SINCLAIR 1000 2K. Book.

12. Original 1000 User Manual.

13. Original 2068 manual.

14. Timex Sinclair 2068 Beginner/ Intermediate Guide.

15. Timex Sinclair 2068 Intermediate/Advanced Guide.

16. 51 Game Programs For The Timex Sinclair 1000 and 1500.

17. CompuServe Information Service Starter Kit User's Guide.

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gala affair held September 15th at the super home of Ann and Bob Diggs. Fourteen members brought family for a total of 29, and none objected to the long drive. We've put in our reservations for next year!

Finally, I'm Pleased as Punch at the decision to hold a Beginner's QL Tutorial at noon each month during our workshop time slot. I've been promised that the first session will be geared to my level of expertise: "Open the box, remove the QL, plug in the TV or monitor cable, then" etc.!!!! We'll start with using microdrives then advance to disk systems. JOIN US October 13th!

'Nuff

Ruth

CHAOS GAME
by Bob Warner

I don't know who was the first to call the Chaos Game a game; whoever did certianly overrated it, since it would be tedious, and messy to play without using a computer. The playing field is a triangular area on a piece of paper, with the vertices numbered 1, 2, and 3. To play, you mark a point, either inside or outside this area, then throw a 3-sided die (or more likely a 6-sided die, and divide by 2). The number that comes up determines to which vertex your line is to go (i.e. 1, 2, or 3) from your marked point to the vertex having that number. You take the mid-point of that line as your next marked point, and throw the die again, to repeat the process. Anyone using paper and pencil to try this out would probably be pretty discouraged at the end of 25 or 30 throws, with no perceptible pattern. It is a bit surprising that, even if you start outside the triangle, the point quickly gets inside, and by about 1000 throws the final pattern has emerged. Even more surprising is that this pattern is a fractel set (which means that the dimension of the set is a FRACTION, between 1 and 2, in this case). A usual additional requirement for a set to be a fractal is that any piece of it should contain inside it an image (or an approximate image) of the original set, and it does appear that Sierpinski's Gasket has this property; so does the Mandelbrot Set.

You can convince yourself that Sierpinski's Gasket has no area by looking at the amount of area that is removed in the process of arriving at the final set. For simplicity, suppose that the original triangle has an area of one. THe middle triangle of area 1/4 has been removed from this, leaving 3 triangles, each of an area 1/4. From each of these a middle triangle is removed, of area (1/4)x(1/4), leaving 9 triangles, each of area (1/4)x(1/4)x(1/4), with 1/4 of each of these removed. So far then, we have removed:

$$1/4 + 3 \times (1/4) \times (1/4) + 9 \times (1/4) \times (1/4) \times (1/4) = .578125.$$

At the next stage, we have removed $(3 \times 3 \times 3)/(4 \times 4 \times 4 \times 4) = .1054687$ more, which gives .6835937; if this is continued (the next term would be the fraction with four 3's upstairs, and five 4's downstairs, i.e. 81/1024, you can believe that the total amount subtracted would add up to one. (A spreadsheet can make this credible, for example). Since we started with a total area of one, we have no area left. (I realize that this may well be more than you ever wanted to know about fractals, but at leat you could skip it if you wished.)

****

```
100 REM The Chaos Game.
105 REM This produces a fractal
figure called "Sierpinski's Gas
ket"
110 REM By Tim Swenson,July 199
0
120 CLEAR 65535: BORDER  : LET
n=0
140 PAPER 0: INK 7: CLS
145 PRINT "   SIERPINSKI'S  GAS
KET"
150 PLOT 10,10
160 PLOT 75,135
170 PLOT 135,10
180 LET x=RND*99
190 LET y=RND*99
210 LET x1=x: LET n=n+1
220 LET y1=y
230 LET roll=INT (.5+RND*3)
240 IF roll=1 THEN  LET x2=10:
LET y2=10
250 IF roll=2 THEN  LET x2=75:
LET y2=135
260 IF roll=3 THEN  LET x2=135:
LET y2=10
270 LET x=(x1+x2)/2
280 LET y=(y1+y2)/2
290 PLOT x,y
300 IF n/250=INT (n/250) THEN
BEEP .1,.1
310 GO TO 210
9000 PRINT USR 100: SAVE "chaos.
B1" LINE 1
```

SIERPINSKI'S GASKET
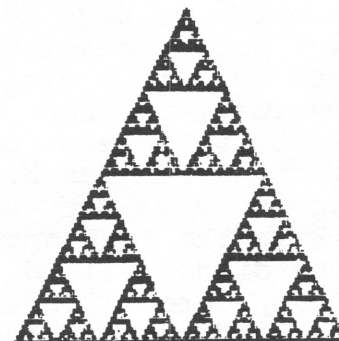
After 95500 rolls

Tweak & Tinker
By Herb Schaaf

QL Power Supply Unit (PSU)

I've been fortunate to have a QL PSU to study and play with on my electronic workbench. I enjoyed examining it and trying to figure out how it worked. It seemed to me that I could eliminate a lot of "extra" stuff in the PSU and have a cooler QL as a result, so I tried it and it works! I plan to "show and tell" the details at the October hardware session.

The QL PSU is a work of art, using 'tap-switching' to provide a plentiful supply of DC to the QL. The heat sink inside the QL is very confined with almost no free air circulation, and gets hot. The heat sink runs cool if you set it outside and keep the fins vertical in free air. By cutting down the DC voltage fed into the QL we can lower the watts wasted as heat inside the QL case.

If you have adequate 120 volt AC from your electric company, you can probably do as I did and disconnect a lot of that stuff inside the PSU. It seems that there are three windings on the secondary side of the PSU transformer for the DC supply, and a fourth winding for the AC supply to the QL . I unhooked two (*) of the DC windings, and that lowered the DC voltage to the QL. After that I had a bunch of surplus parts including some 1N5400 diodes. These diodes have a forward voltage drop of about 1 volt, and by placing one or both of them in series with the DC line (in my case the red wire) I get even more voltage reduction. There being no free lunch, these dropping diodes will get hot, but the heat is in the PSU and not in the QL. One diode will do nicely for a QL+Trump Card (7.2 volts at 1.25 amps) and two diodes are just right for a QL by itself (7.2 volts at .8 amps). The QL (and Trump Card) now run cozy warm instead of sizzling hot, and the PSU is not as hot as the QL used to be. The 7805 regulators now have just enough voltage to work and no more than needed.

* Which two, you ask ?

For those big (soldering) guns here is what you do:

Open the PSU case and take out the transformer leaving the printed circuit board, heat sink, and capacitors attached. Set the assembly down on the bench so you are facing the 2 x 3 inch flat side of the aluminum heat sink with its notch at the bottom left corner. Eight terminal posts come up out of the top of the transformer; the two on the left are numbered 9 and 10, each having a 20 gauge wire wrapped and soldered on. Disconnect these two wires from their terminal posts and bend the wires out of the way. Don't cut them off because we might figure out a way to use the 5 volts they can provide! You might want to slip on insulating sleeves to make sure they won't reconnect. That's it!

The SCR, zener diode, transistor, rheostat, and 4 resistors are now superfluous. You can leave them there or take them off for another use, although it would be a good idea to leave some form of bleeder resistor across the DC supply. The 2 diodes on the left side are reused as voltage droppers.

If you occasionaly get a white (or green) screen when you first start (due to the need to charge up the capacitors inside the QL) just hit the reset button for the usual tweed. If this gets to be a nuisance you may want to raise the voltage back a notch, and live with a hotter QL.

CATS Workshop
By Duane Parker

Anyone interested in doing some hands-on projects is invited to bring their ideas and hardware and software at 11:15 A. M. We plan to work on the following projects.

1. Development of a disk or microdrive cataloging system with the use of SuperBasic and Archive on the QL. We distributed the 3rd version of the S-BASIC program for testing at the last meeting - bring in your ideas and improvements (Mark, Bob & Bob, Akin, and Herb - let's hear from you). Mannie already did some fixing to the code - we'll have his improvements at the Oct. meeting. Now we need to think about the Archive part of the project.

2. Barry Washington put together an "autobooter" for the QL.
    - bring the parts and the tools you need. We (Barry, we need you) will give you a hand.

3. Herb Shaaf will be here to help you modify your QL power supply. See his article "Tweak and Tinker". You will need tools, especially a Phillips screwdriver and a sturdy soldering iron - enough to heat the tabs on the transformer output.

4. We didn't manage to try the proposed networking ideas last time. I have some code written to try networking without the Toolkit! So let's bring our QL's and cables and try this out!

Keep your ideas coming! Set-up early so we can have fun with these projects.

Meeting Subject

Although promises were made, NASA has failed to produce a speaker for CATS this month on the topic of Artificial Intellegence.

As a result of this situation, Vice President and Program Charman Tom Robbins has come forware with his ever-ready alternative programming to expertly fill the void.

The program planned by Tom will begin with a 15-minute discussion of the "QL keyword of the Month." He will then move into laying the foundation for a tutorial on SuperBasic. For this part of the exercise he will be assisted by our able Newsletter Editor, Tim Swenson. [Don't look at me. I didn't write this. - ED]

At: New Carrollton Public Library 7414 Riverdale Road (Hwy 410), New Carrollton, MD

The next meeting of CATS will be held on: October 13, 1990

11:00 AM Hardware Workshop
2:00 PM General Meeting

Hwy 410

B-W Pkway

New Carrollton Public Library

Hwy 450

Capital Beltway
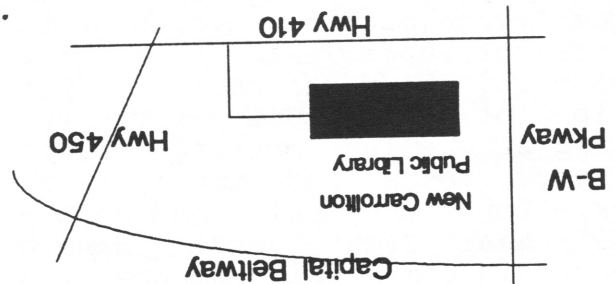
CATS Newsletter
P.O. Box 11017
Takoma Park, MD 20913

FIRST CLASS MAIL

The Capital Area Timex/Sinclair
Users Group is a not-for-profit group devoted to serving the interests of those who own, use, or are interested in the Timex/Sinclair family of computers.

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CATS maintains a gratis exchange of newsletters with approximately 30 Users Groups across the U.S. and Canada. Groups not sending a newsletter to us for six months are automatically taken off the list.

Meetings

Monthly meetings are held from 11:00 AM to 4:30 PM, on the second Saturday of each month, at the New Carrollton Public Library.

Newsletter

Memberships cost $15 per year, are good for 12 months, and include all privileges (access to libraries, group buys, etc.). A newsletter only subscription is available for persons living outside the Washington Metro area and is $12 per year.

Networks

Timex SIG on Compuserve: Wednesday night, 10:00 PM Eastern time (GO CLUB).

CATS BBS: (301) 588-0579. 8-N-1. 300/1200 baud. News and general information, 24 hours a day.